
The background of the slide is a deep space image featuring a bright, glowing nebula with wispy, golden-brown and white filaments. A small, distinct red dot is visible within the nebula's structure. The overall scene is set against a dark, star-filled cosmic background.

***Believing in Bold IDEAS!***

***Vision of Space  
and NASA in 2050  
and 2100***

MSFC Space 2100  
Amy Sivak  
November 2014  
TVIW





***Believing in Bold IDEAS***

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MSFC Sp  
Amy Sivak  
November  
TVIW



# Space 2100 Philosophy

Be creative and open-minded  
Create environment to think freely  
Flow of ideas between employees and leaders  
Embrace the 80% solution quickly  
Be agile in thinking and action  
Embrace diversity  
Dream  
Create our future  
Create environment of no right or wrong answer



# 2013 Winter Sprint

1. What will the world look like in 2100?  
What technologies will be online?  
How will we be working?  
What grand challenges will the world be facing?
2. What will the world be doing in space in 2100?  
What might NASA's role look like?  
What pieces seem "naturally" MSFC?



Winter 2013 Sprint



Most participants from technical organizations



# Breakthroughs since 1900 have changed our world



Air travel and space exploration routine



Nuclear energy available globally



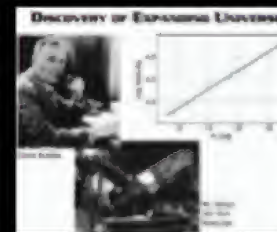
Artificial body parts, vaccines, antibiotics, molecular biology



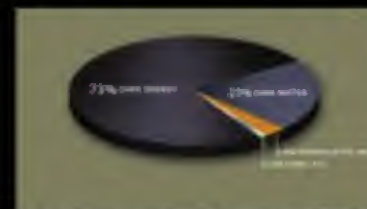
Gigaflop computational capabilities



Global communications



Evolving understanding and map of the universe

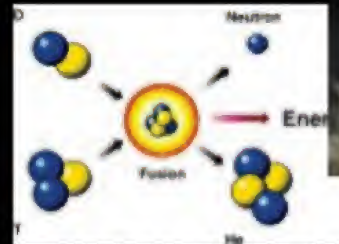




Breakthrough: "Any significant or sudden advance, development, achievement, or increase, as in scientific knowledge, that removes a barrier to progress"



What if someone invents warp drive?



Will clean and abundant energy be possible?



What if we learn to control aging?



We don't know what's possible – breakthroughs are, by their very nature, unpredictable...



Will humans and machines merge?





# Winter 2014 Sprint

2050 Cis-Lunar Econosphere

## Phase II

How to Get There?

Barriers and Enablers?

What to Start Doing Now?

Phase I  
2050 CLE *Snapshot*  
(More detail than  
2013 Sprint)

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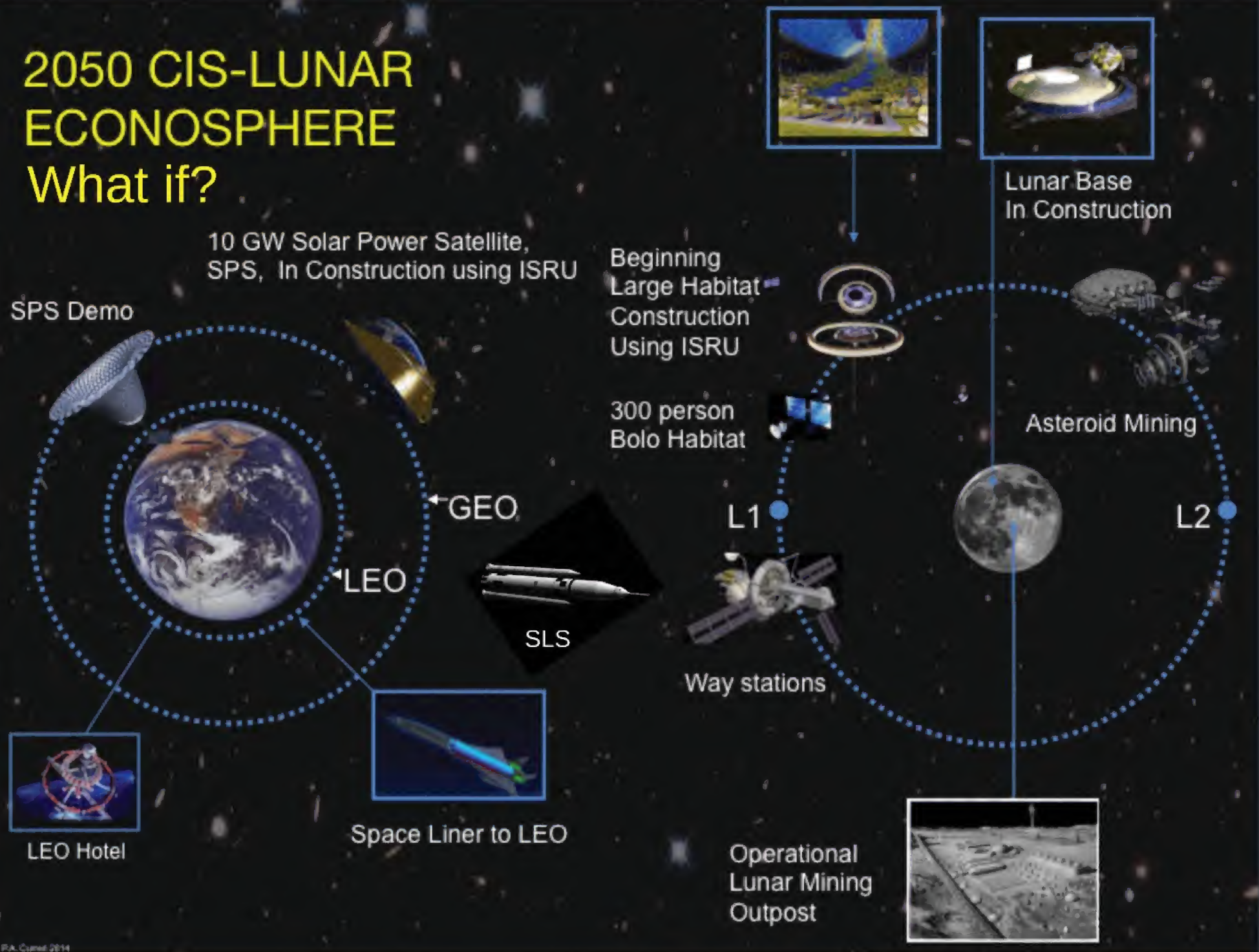
Compare  
Converge  
Refine

Present to  
MSFC  
Center  
Director

2 Independent Teams  
Mostly New Members  
Diverse Disciplines



# 2050 CIS-LUNAR ECONOSPHERE What if?





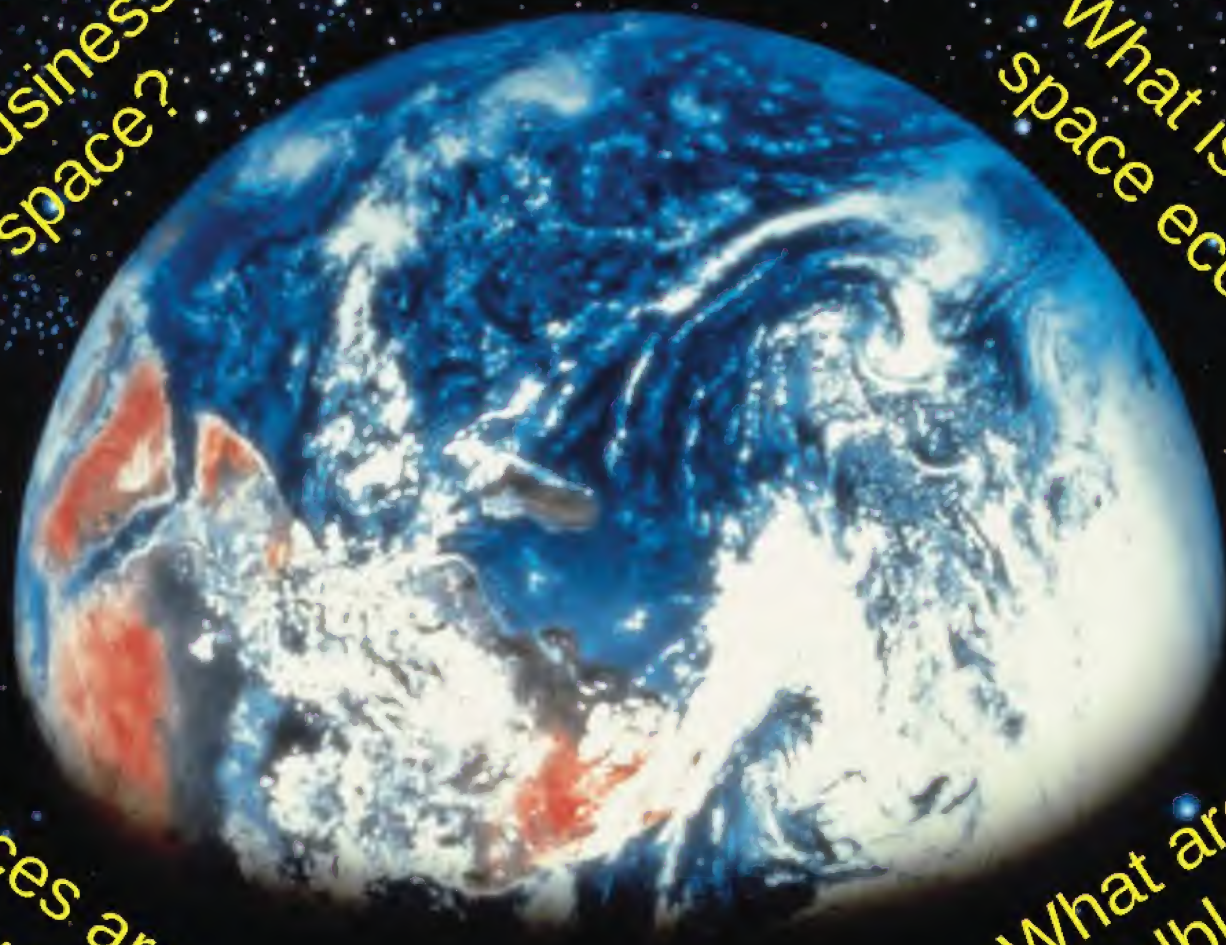
# 2014 Winter Sprint

What is the business in cis-lunar space?

What practices are needed? How do they differ from today?

What is NASA's role in the space economy of 2050?

What are the top roadblocks? What are the solutions to these roadblocks?





# NASA Leadership and Culture

Space Law and Policy



Technology Investments

Business Accountability



## **Key messages from the 2100 story:**

- Leverage but question what we know**
- No technological unobtainium**
- Know when to lead and when to follow**
- Continue to retool our culture to creative-collaborative when appropriate**
- Break down barriers (process, communication, etc.)**



The background of the slide is a close-up, circular view of a textured surface. It has a mottled appearance with shades of blue, grey, and orange-brown. There are numerous fine, reddish-brown lines and scratches crisscrossing the entire surface, giving it a worn or aged look. The lighting is somewhat uneven, with a brighter area towards the bottom center.

**Questions?**